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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR		ATTORNEY DOCKET NO.
09/040,825	03/18/98	FRYBERG	M	ICH275

025230
DARA L. ONOFRIO
233 BROADWAY
SUITE 2702
NEW YORK NY 10279-2799

IM52/0822

EXAMINER	
YAMNITZKY, M	
ART UNIT	**PAPER NUMBER**
1774	22

DATE MAILED: 08/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.	Applicant(s)
09/040,825	Mario FRYBERG et al.
Examiner	**Art Unit**
M. Yamnitzky	1774

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *three (3)* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *May 14, 2001*.

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *3, 4, and 6-13* is/are pending in the application.

4a) Of the above, claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *3, 4, and 6-13* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

15) ☐ Notice of References Cited (PTO-892)
16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
17) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). _____
18) ☐ Interview Summary (PTO-413) Paper No(s). _____
19) ☐ Notice of Informal Patent Application (PTO-152)
20) ☐ Other:

1. The request for a continued prosecution application (CPA) under 37 CFR 1.53(d) filed on 05/14/01 is acknowledged. 37 CFR 1.53(d)(1) was amended to provide that the prior application of a CPA must be: (1) a utility or plant application that was filed under 35 U.S.C. 111(a) before May 29, 2000, (2) a design application, or (3) the national stage of an international application that was filed under 35 U.S.C. 363 before May 29, 2000. *See Changes to Application Examination and Provisional Application Practice*, interim rule, 65 *Fed. Reg.* 14865, 14872 (Mar. 20, 2000), 1233 *Off. Gaz. Pat. Office* 47, 52 (Apr. 11, 2000). Since a CPA of this application is not permitted under 37 CFR 1.53(d)(1), the improper request for a CPA is being treated as a request for continued examination of this application under 37 CFR 1.114. *See id.* at 14866, 1233 *Off. Gaz. Pat. Office* at 48.

2. The preliminary amendment filed 05/14/01, which cancels claim 5 and amends claims 12 and 13, has been entered.

Claims 3, 4 and 6-13 are pending.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 3, 4 and 6-13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The "enhanced light fastness properties" limitation set forth in independent claims 12 and 13 renders the claims indefinite because it is not clear what the comparison point is for determining whether a recording sheet comprising said layer has enhanced light fastness properties. It is not certain if any recording sheet comprising said layer would inherently have enhanced light fastness properties. If not, what is the basis for determining that a particular recording sheet meets this limitation? (This issue is similar to the issue raised in Paper No. 8 regarding a previous claim limitation of "improved light fastness".)

The "enhanced light fastness properties" limitation also renders the claims indefinite because the scope of "light fastness properties" is not clear. The paragraph bridging pages 14 and 15 of the present specification describes one test for light fastness in which % loss of density is determined. Other than % loss of density as measured by the described test, what other light fastness properties can be or must be enhanced in order to meet the claim limitation of enhanced light fastness properties?

4. Claims 3, 4 and 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kono et al. (4,801,497) or Kashiwazaki et al. (5,747,146), either of these patents taken in view of Smigo et al. (5,281,307).

Kono et al. and Kashiwazaki et al. disclose recording media for ink jet printing comprising a support and at least one ink-receptive layer. Both of these patents teach the use of cationically modified polyvinyl alcohol in an ink-receptive layer.

Kono discloses the use of cationically modified polyvinyl alcohol wherein the cationic group is present in the polymer in an amount between 0.05 and 20 mole percent. The cationically modified polyvinyl alcohol is used in combination with one or more other polymers. See the whole patent. In particular, see the abstract, column 4, lines 11-18, c. 4, l. 59 to c. 6, l. 16 and c. 7, l. 35-53.

Kashiwazaki discloses the use of cationically modified polyvinyl alcohol as a binder in an ink-receptive layer wherein the cationic group is preferably present in the cationically modified polyvinyl alcohol in an amount between 0.05 and 30 mole percent, more preferably between 0.1 and 10 mole percent. The cationically modified polyvinyl alcohol may be used in combination with one or more other water-soluble resins and/or water dispersible resins. See the whole patent. In particular, see column 5, line 35 to c. 6, l. 29 and c. 7, l. 8-29.

Neither Kono nor Kashiwazaki explicitly discloses a copolymer of the general structure set forth in independent claims 12 and 13, although such a copolymer is within the scope of each patent's cationically modified polyvinyl alcohol which is a polyvinyl alcohol having a cationic group such as a primary, secondary, or tertiary amino group, or a quaternary ammonium group. The copolymer required by the present claims is a polyvinyl alcohol having a primary or secondary amino group. The mole percent range for the cationic groups as disclosed by Kono (0.05 to 20 mole percent) encompasses the relative amount of vinyl amine units required by the present claims (y = 0.05 to 0.2, which is 5 to 20 mole percent). Kashiwazaki also disclose a mole percent range

(0.05 to 30) which encompasses the presently claimed range for y. Both patents disclose a preferable range (0.1 to 10 mole percent) which overlaps the presently claimed range for y.

Smigo et al. disclose a paper coated with a polyvinyl alcohol/vinyl amine copolymer containing between 0.5 and 25 mole% vinylamine units, preferably 2 to 12 mole% vinylamine units. The copolymer may be made by copolymerizing vinyl acetate with N-vinylamides such as N-vinyl formamide or N-vinyl acetamide, following by hydrolysis of the vinyl acetate to vinyl alcohol and hydrolysis of the vinyl amide to vinylamine. A crosslinking agent may also be used to crosslink the copolymer. See the whole patent. In particular, see column 1, line 44 to c. 2, l. 22, c. 4, l. 61 to c. 5, l. 25, c. 6, l. 8-20, c. 6, l. 36-60 and Examples 1-5. The copolymers disclosed by Smigo are polyvinyl alcohols containing amino groups, and are inherently cationic. Smigo teaches using the copolymers to coat paper and paper-type products in order to provide improvements in properties such as dry strength, wet strength and fold resistance.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the copolymers disclosed by Smigo as the cationically modified polyvinyl alcohol used in the recording medium of Kono or Kashiwazaki. One of ordinary skill in the art would have been motivated to do so by the fact that the copolymers taught by Smigo meet Kono's and Kashiwazaki's requirements for the cationically modified polyvinyl alcohol including the mole percent requirements for the cationic group, and by Smigo's teachings regarding the improved properties provided by using the copolymer. One of ordinary skill in the art would recognize that

the improved properties taught by Smigo would be beneficial with respect to a recording medium for ink jet printing.

Regarding the requirement for an amount of copolymer between 10 to 75 weight % of the combined amount of copolymer and binder, both the Kono patent and the Kashiwazaki patent disclose amounts of cationically modified polyvinyl alcohol (hereinafter "catPVA") within the required range.

For example, Kono teaches that the amount of Polymer-A should be in the range of 1 part by weight to 33 parts by weight based on 100 parts by weight of catPVA (see col. 6, lines 16-35). This equates to an amount of catPVA of about 99 to about 75% by weight based on the combined weight of catPVA and Polymer-A (e.g. in a composition containing 33 parts by weight Polymer-A and 100 parts by weight catPVA, the composition contains about 75 percent by weight catPVA based on the combined weight of catPVA and Polymer-A). An amount of 75% by weight is within the range required by the present claims. Further, Kono teaches that other polymers may be used in combination with the catPVA and Polymer-A, with the weight of catPVA plus Polymer-A to the weight of other polymers being in the range of 20:1 to 1:20, preferably 15:1 to 1:10 (see col. 7, lines 35-53). Thus, the use of other polymers results in other amounts of catPVA within the range required by the present claims (e.g., in a composition containing 33 parts by weight Polymer-A and 100 parts by weight catPVA, and a 20:1 ratio of catPVA and Polymer-A to other polymer, the composition contains about 71% by weight catPVA based on the combined weight of catPVA, Polymer-A and other polymer).

Kashiwazaki teaches that the amount of aqueous resin emulsions (in terms of solids) is within a range of 0.1 to 50% by weight, preferably 1 to 30% by weight, based on the content of catPVA (see col. 7, lines 61-65). This equates to an amount of catPVA of about 99.9 to about 67% by weight based on the combined weight of catPVA and aqueous resin emulsion (solids content). Amounts in the range of 75 to about 67% by weight are within the range required by the present claims. Kashiwazaki also teaches that other cationic polymers may be added (see col. 8, l. 66 to c. 9, l. 17). Inclusion of any other cationic polymers will lead to lower amounts of catPVA relative to the total weight of catPVA, solids of the aqueous resin emulsion, and other cationic polymer. Some of the examples in the Kashiwazaki patent also utilize amounts of catPVA within the scope of the presently claimed range: Example 12 (col. 16) uses 71% catPVA, Example 31 (col. 19) uses 50% catPVA, and Example 32 (col. 19) uses 25% catPVA.

Regarding the requirement that the layer comprising the copolymer provide the sheet with enhanced light fastness properties, it is the examiner's position that the recording medium of Kono or Kashiwazaki, as modified to include the copolymer disclosed by Smigo in Kono's or Kashiwazaki's ink-receptive layer, would inherently have enhanced light fastness properties absent objective evidence to the contrary.

Regarding claim 13's requirement for a binder comprising gelatin, both the Kono patent and the Kashiwazaki patent disclose gelatin. For example, see column 7, line 38 of the Kono patent and see column 5, line 45 of the Kashiwazaki patent.

5. Miscellaneous: In "(b)" of claim 12, "mixure" should read --mixture--.

6. Any inquiry concerning this communication should be directed to Marie R. Yamnitzky at telephone number (703) 308-4413. The examiner can generally be reached at this number from 6:45 a.m. to 3:15 p.m. Monday-Friday.

The current fax numbers for Art Unit 1774 are (703) 305-3599 for official after final faxes and (703) 305-5408 for all other official faxes. (Unofficial faxes for Art Unit 1774 can be sent to (703) 305-5436.)

Marie R. Yamnitzky

MRY
08/21/01

MARIE YAMNITZKY
PRIMARY EXAMINER
1774